



south elevation
scale 1/8"=1'
spring equinox 10 am



east elevation
scale 1/8"=1'
spring equinox 10 am



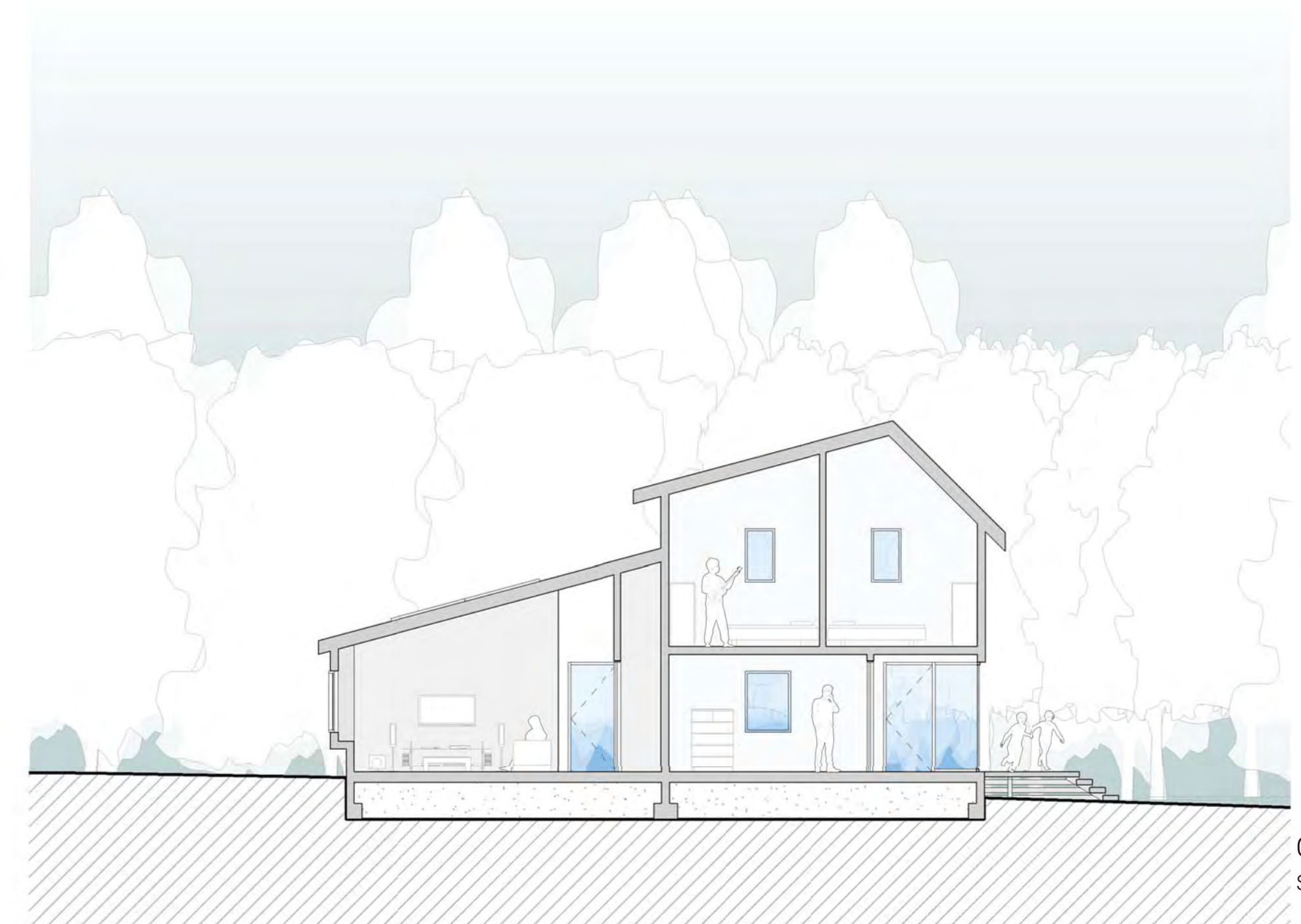
north elevation
scale 1/8"=1'
summer solstice 5 pm



west elevation
scale 1/8"=1'
fall equinox 11 am



single unit section
scale 1/8"=1'



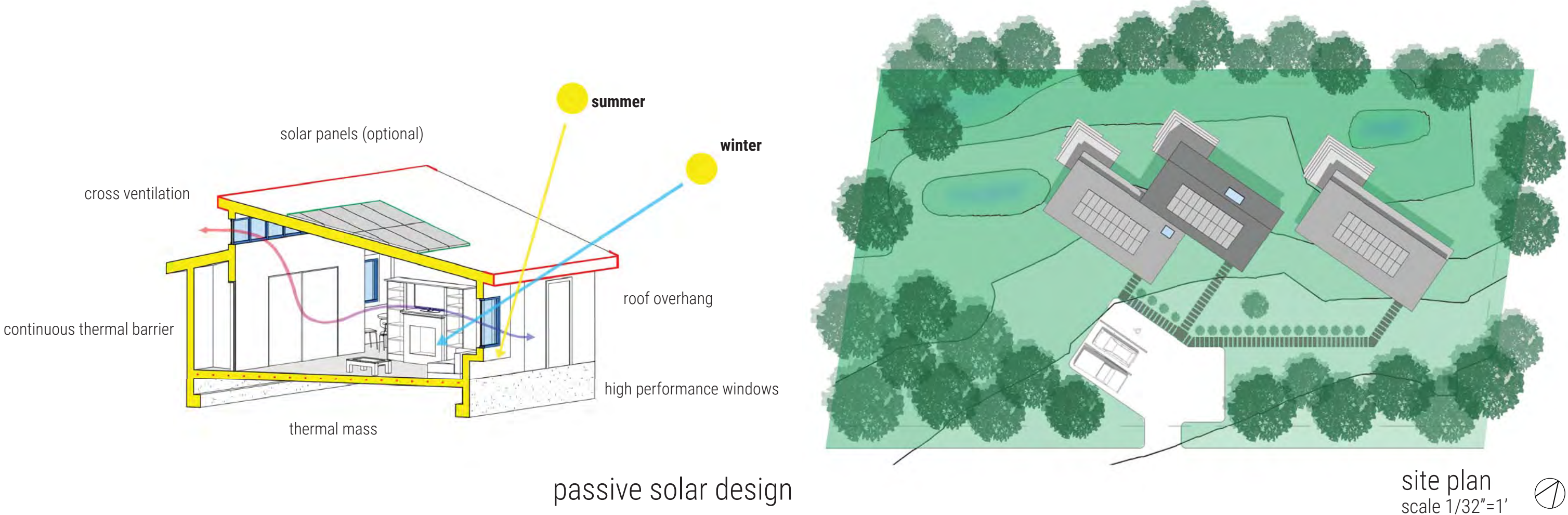
double unit section
scale 1/8"=1'

PASSIVE HOUSING FOR ALL

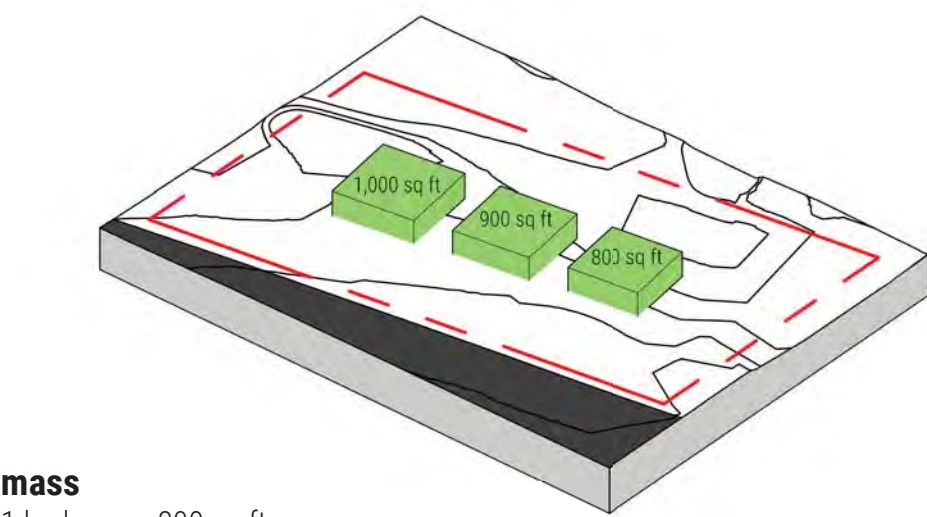
sustainable + affordable

BURTS PIT ROAD - NORTHAMPTON, MA

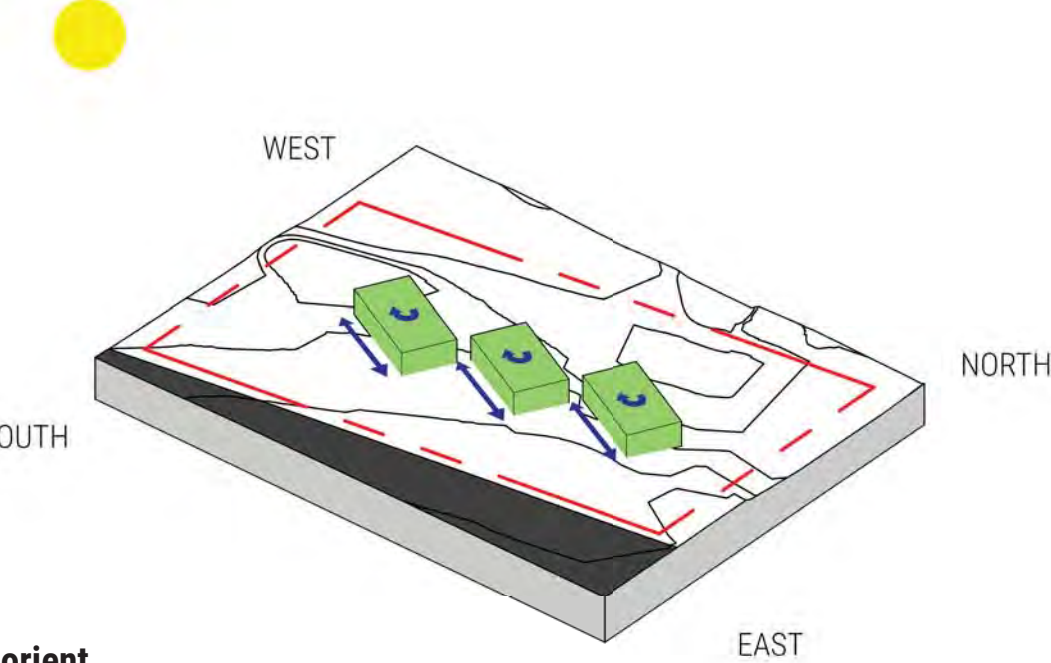
The Burts Pit Road affordable housing project in Northampton follows the design principles of a passive solar building. By orienting the housing units to the south, we take full advantage of the the sun's energy to help heat and cool living spaces. A thermal mass at the base of the building stores energy during the day and that energy is released at night, keeping the units warm. A large roof overhang protects against too much solar gain during the summer months and a northern facing clerestory window increases ventilation. Passive solar design strategies limit energy usage and lower heating and cooling costs throughout the year.



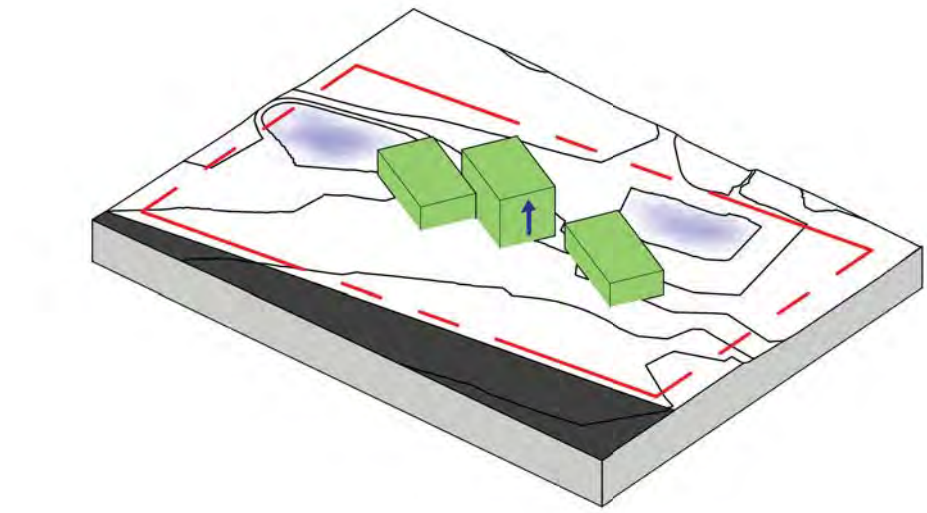
design process



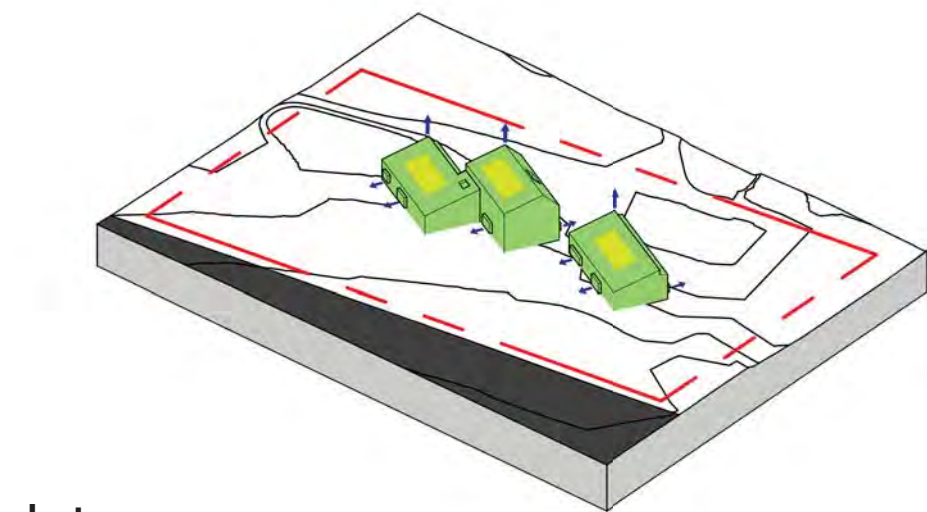
mass
1 bedroom - 800 sq ft
2 bedrooms - 900 sq ft
3 bedrooms - 1000 sq ft



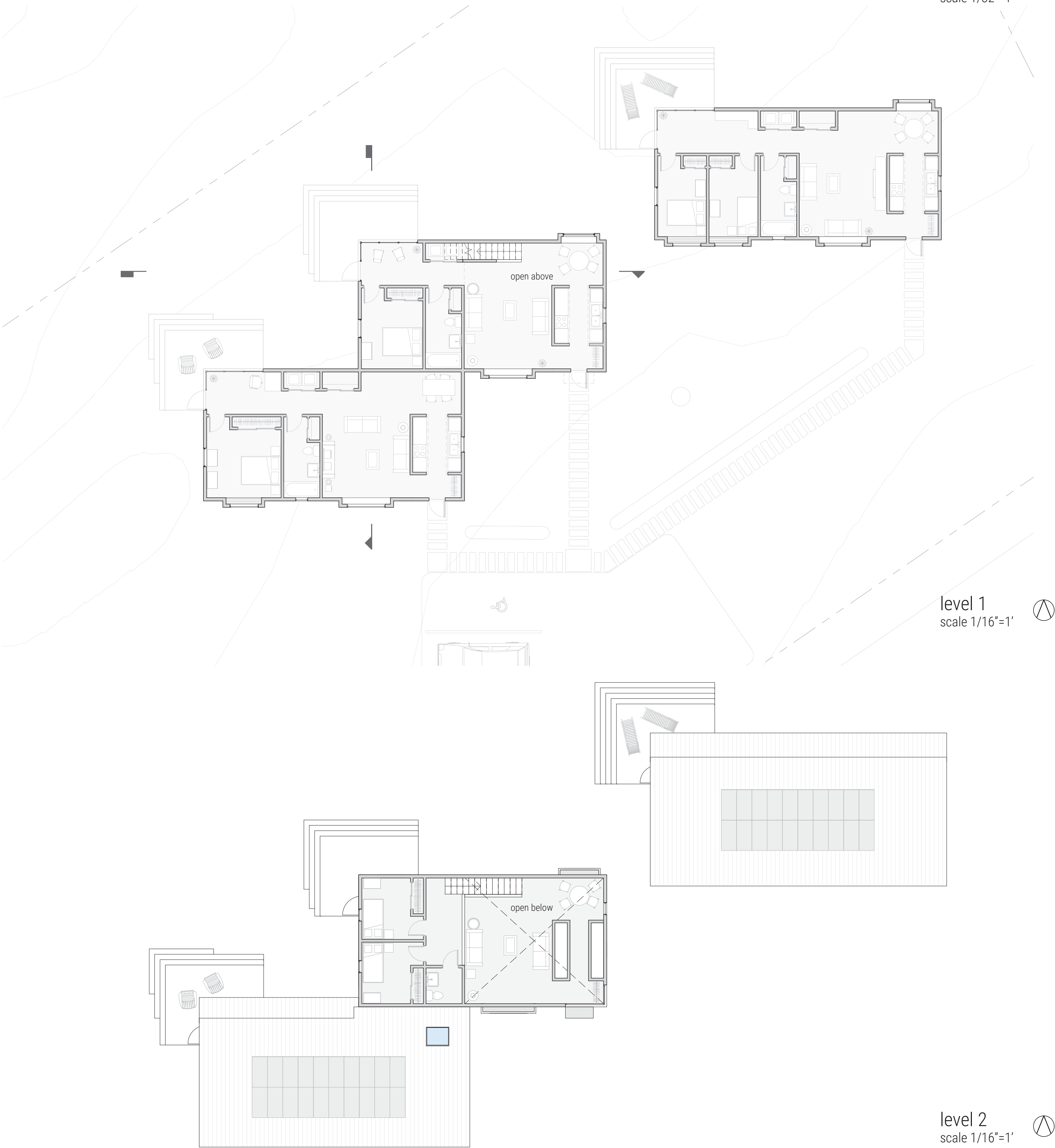
orient
Rotate the three units towards the souther sky and elongate southern + northern facade to maximize solar gain.



place
Set back housing from site boundary to increase front yard size and avoid rain gardens. Add a second level to the three bedroom unit and attach one the bedroom unit forto the front to create a more cost-efficient floor plan.



adapt
Pull southern + northern windows out to frame views and increase volume of the interior. Pull roof up to a 15 degree angle to increase the potential of solar panels and punch in northern clerestory window to increase natural day-lighting.



level 1
scale 1/16"=1'

level 2
scale 1/16"=1'

